

REMARKS

Claims 1-14 are all the claims pending in the application. Claims 1-2 and 4-7 have been amended and claim 3 has been canceled. Claim 1 has been amended for purposes of clarity and based on, for example, page 4 of the specification.

The Abstract of the Disclosure has been amended.

Entry of the above amendments is respectfully requested.

I. Objections

The Abstract of the Disclosure has been amended, and thus it is respectfully submitted that the objection has been overcome.

Claim 1 has been amended for purposes of further clarity and to address the Examiner's objections. However, with respect to "optionally at least one element selected from Nb, Ta and V at contents such that $Nb/2 + Ta/4 + V \leq 0.5\%$ " and "optionally at least one element selected from Se, Te, Ca, Bi, Pb at contents which are less than or equal to 0.1%", it is respectfully submitted that one of skill in the art would understand that when Nb, Ta, V, Se, Te, Ca, Bi, and/or Pb is present, it is included in an amount greater than 0%.

In view of the above, withdrawal of the objections is respectfully requested.

II. Rejection of Claims 1-7 under 35 U.S.C. § 112, second paragraph

Claims 1-7 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Without acquiescing the merits of the rejection, claims 1 and 7 have been amended for purposes of further clarity. With respect to "liquid steel" in claim 7, it is submitted that one of skill in the art would understand the meaning of the term. Specifically, one of skill in the art would understand that claim 7 is related to a melting process of steel in the liquid state, before solidification and rolling.

In view of the above, withdrawal of the rejection is respectfully requested.

III. Rejection of Claims 1-5 under 35 U.S.C. § 103(a)

Claims 1-5 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Beguinot (US 5,714,116) alone, or alternatively, in view of the ASM Handbook Volume 1.

Applicants respectfully traverse the rejection.

It is respectfully submitted that Beguinot does not render the present invention according to claim 1 obvious. Claim 1 recites an amount of $0.5\% < \text{Ti} + \text{Zr}/2 \leq 1.1\%$. The upper limit of $\text{Ti} + \text{Zr}$ disclosed in Beguinot is 0.45%. Since Beguinot teaches a specific composition of steel and an amount of $\text{Ti} + \text{Zr}$ less than 0.45%, one of ordinary skill in the art would not be motivated to arrive at the claimed range of $0.5\% < \text{Ti} + \text{Zr}/2 \leq 1.1\%$.

With respect to the formula in claims 1, 2, and 4, it is respectfully submitted that it is not a "general formula" but formulae used to limit the composition. The limitations are defined by the specific combination of elements.

For at least the above reasons, it is respectfully submitted that Beguinot fails to disclose, teach or suggest the present invention according to claim 1.

In addition, each of claims 2-7 depend from claim 1, and thus it is respectfully submitted that these claims are patentable for at least the same reasons as claim 1.

Regarding claim 7, it is also submitted that Takashima discloses a method for adding a slag-forming element used to deoxidize the molten steel and provide improved dephosphorizing and desulfurizing. But, in the present invention, the slag is not used in this respect, but to introduce titanium in the steel by a smooth diffusion. Thus, one of ordinary skill in the art would not be motivated to combine Beguinot and Takashima as proposed by the Examiner to arrive at the claimed invention.

Accordingly, withdrawal of the rejection is respectfully requested.

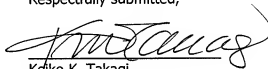
IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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